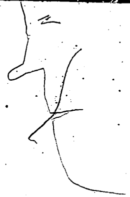
Menlo Park Notebook #187 [N-81-01-00]

This is one of six notebooks that were probably begun on January 10, 1881. It contains notes by Charles Batchelor on gas lighting, which appear to be related to Edison's proposed book on electric light and power. (See Menlo Park Notebook #184). There are additional entries by Batchelor, along with entries by Edison and occasionally by other members of the laboratory staff. Included are notes, calculations, and drawings relating to meters; and drawings of dynamos, voltage regulators, and other electrical devices. The book contains 284 numbered pages.

Blank pages not filmed: 78-81, 116-119, 140-143, 146-241, 252-259, 262-271.

Missing page numbers: 281-282.

1.265



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34
32
20

Cost of Laying Gas Mains
P364 No 32
Treat. on Coal Gas

Yearly table of Gas burning hours
Gas Engineers Pocket Almanac
8
4
$\frac{1}{3}$ way through

Get first case where Gas was sold to Consumers?

Get Standing of gas as a manufacturing industry

~~Wh was~~ Money invested in Railroads

English £170.000
French. £101.877
United States £60'000

(8)

72623
60000
4357380000
676-686-586
48
541339263644
27067486587-208
2/3 2.4.80
87
10909
101877900
916893
1018770
11104593200

30852
101900
30852
3143818800

4010
60000
240600000

1018773000
305631000

30852000
102000
30852
3146904000

U.S. 72623 miles at $60000	4 357 380 000
Gt. B. & I. 16082 at £170,000	3 248 085 000 ~~£676,686,586~~
France 10847 at 101.877 (3 000)	305 631 000 1 110 459 000
Rusia 10725 at (3 000)	305 631 000 1 109 000 000
Rest of Europe 30852 at	3 143 819 000
Canada 4010 60000	240 600 000
	13.820.605,000
South A.–Mexico etc	3.146.900.000
Asia	16.967.505 000
Australia	

12
2
24   24

Relating to Gas
under heading
of Gas
Gas plant
Coal gas

Annual production of Coal 1874
260,000,000, tons
Enc: Brit Vol VI page 73

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up to date in Great Britain
there is consumed for illuminating
purposes Tons 1010-000-000
Newbiggins Page 25

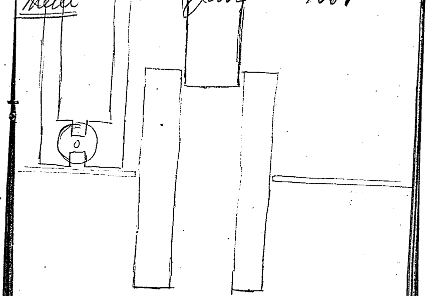
Paris 1878.

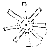
7,484,000,000. Cub. ft gas

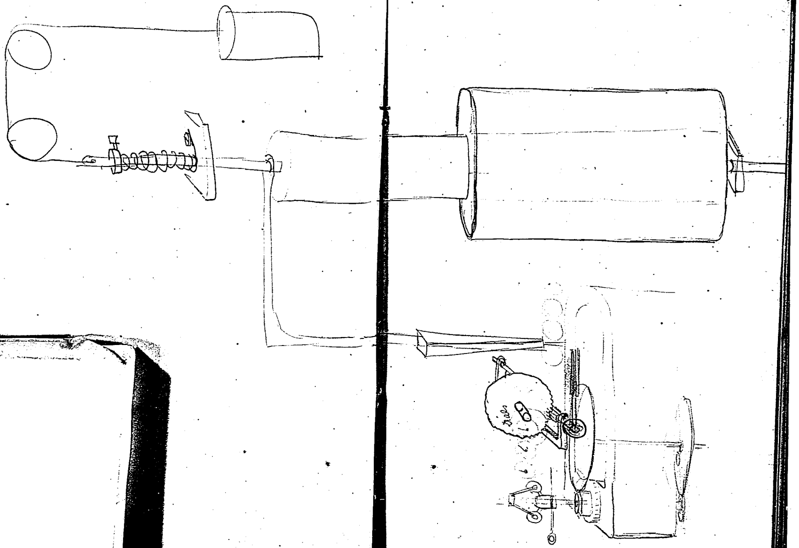
Public Lamps 45,000,

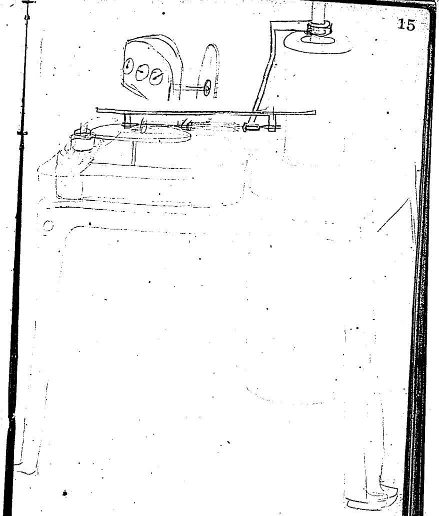
Gas engines in Paris Consume
35, 300000 C.F. per year

Meter Jan 1881

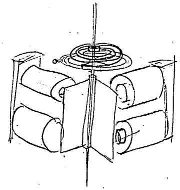


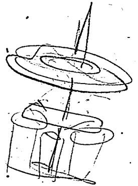


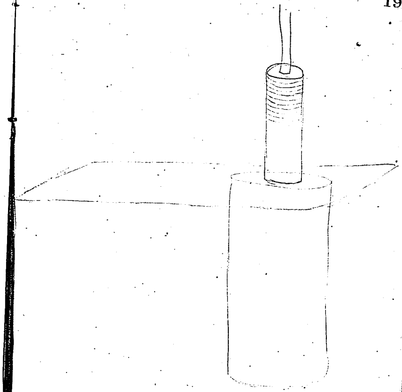

dials



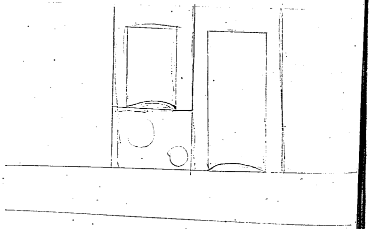
len

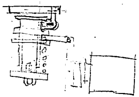


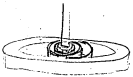


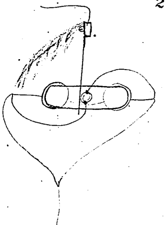


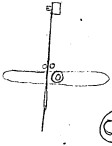
2 1/2
2 1/8

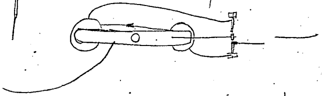


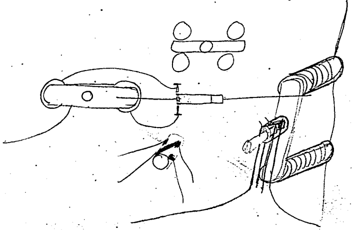




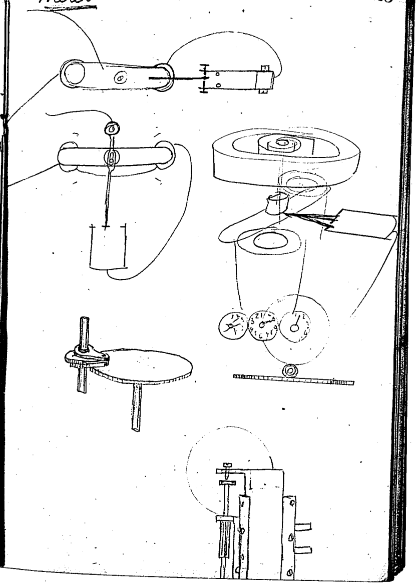


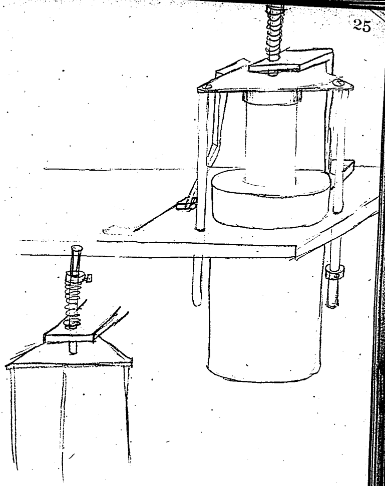


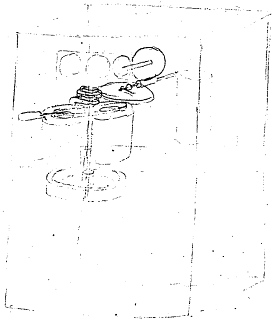




Meter

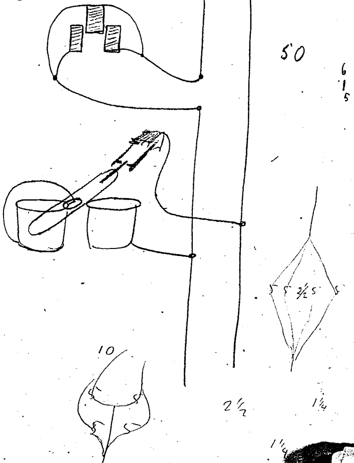


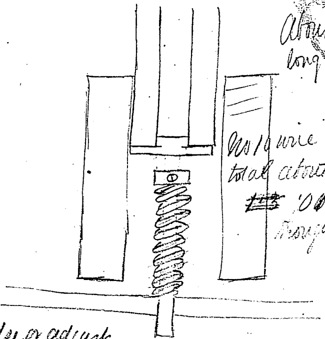




37

Meter Jan 24th 1881
Chas Batchelor


5'0
6
1
5
10
5 5 2½ 5 5
2½
1¼
1¼



About 8in long

No 10 wire
total about 1 ft
~~[illegible]~~ .006 ohms
through all

Use or adjust ~~[illegible]~~ a spring for each different number of lights

5.34 8
6 4.0 8
7 6 8. 12 | 768
64 | 1896

4 5
1 4 0

160 / 1000 (2) 10.68
160

4.4
6.28
10.68
5.34

2
3.14
6.28

48
4.4
192
192
211.2

48 threads

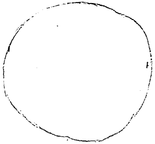
1.40
3.14
56
54
1
4.396

large.

If 2 inches and 3 layers '03½ ohms
Inside loss '03½ ohms.

'033
'033

1896 | 6400 | 0:03½
5688
712



100
25

415
76
24
100 0

0·21

434 000 | 91 0000
18 6 8 000
·42000 | 0

157

·5
3·14
15·70
3·14

89
59
30.

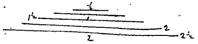
59
18
77.
3145.

3
44
126

157

154
628
785
1

2·5
314
100
25
75
7·850



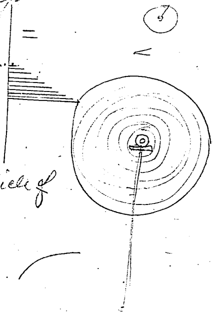
·656
115
3280
656
656
·75440

·464
345
3770
5278
2262
282·750
27
565

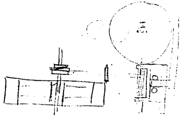
Meter

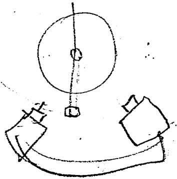
each lamp
must put
an increase
of register

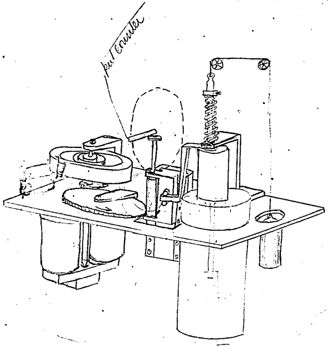
.20
3.14
.6280
3.14 | 1.2560 | 0.4
1.2560



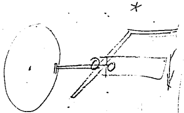
Start with a circle of
30 and end.

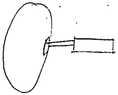


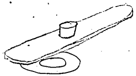


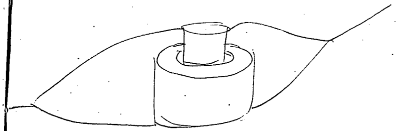

put counter

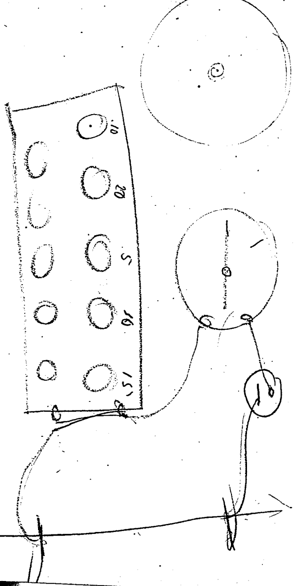
Coils.
Spool.
Break piece







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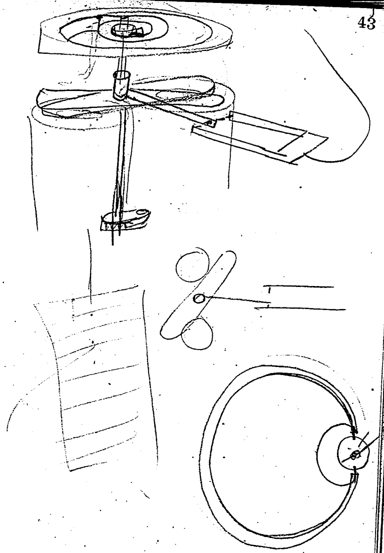
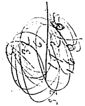
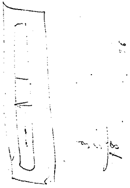
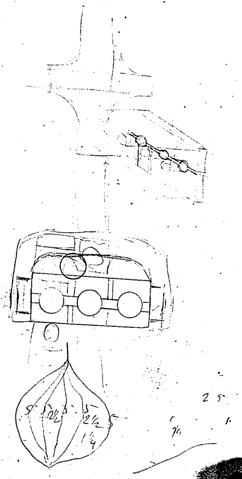
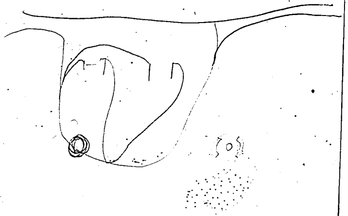
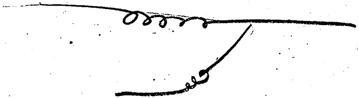


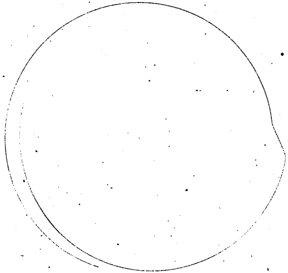





8
5
2½
5
5
2½
5
1¼
2 5
9¼
1



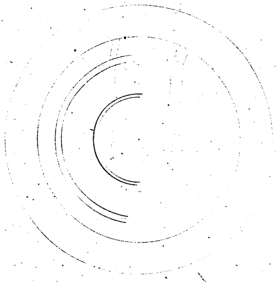




3'

4,800

100



[illegible]

[illegible]

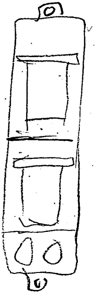
169½ inches No 21 B.W.G. German Silver Wire to the ohm.

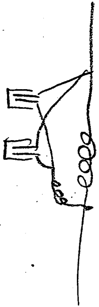
Re coil 5 in diam 15 in diam, one foot long 8 turns to the inch 1440 inches

1440 inches give 10 ohms

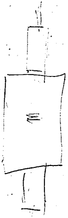
96 turns

16 ¾ in wide 13 ¼.





6 5/8



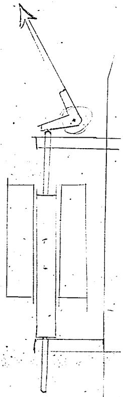
16

6 1/4
7 3/4
14

5 3/8
7
12 3/8

1.6

1111



$2\frac{5}{8}$

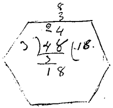
$\frac{3}{8}$

$\frac{2}{8}$

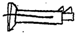
$\frac{4}{8}$

$2\ 8)\,14\,(1\frac{6}{8}$
$\underline{\ 8\ }$
6

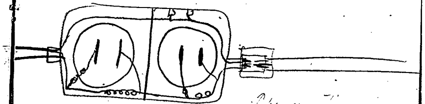
$3\frac{3}{4}$



8
3
24
3)48(18
3
18



Feby 28 1881
TAE

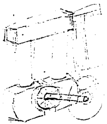


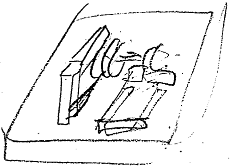
Pipe connection

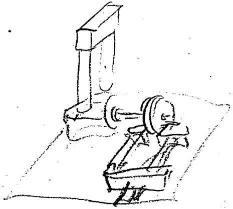
No 26 50 feet .01594 diam

March 7: 1881

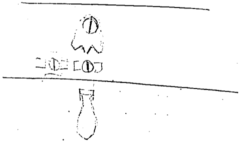
T.A.E.

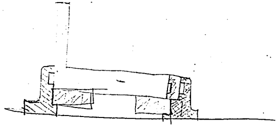


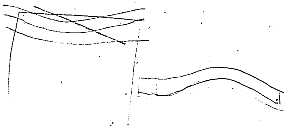


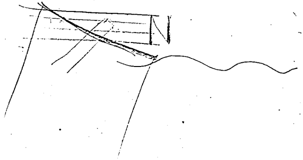


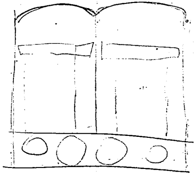
4
5 2
4 5
6
6½
4

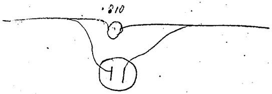








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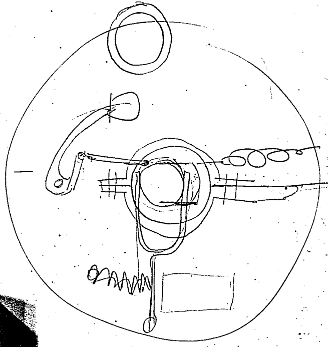
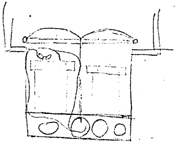
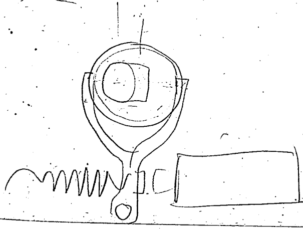
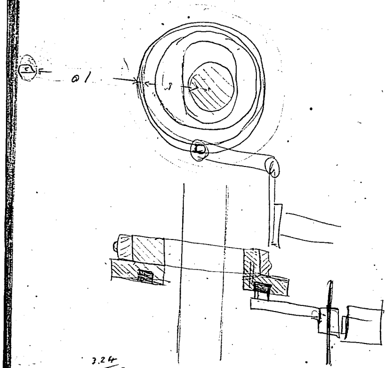




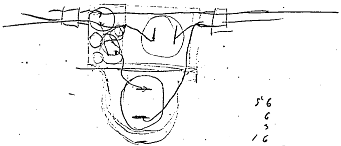




3.24
100

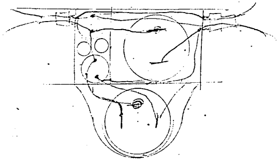
28
2
56
12
68

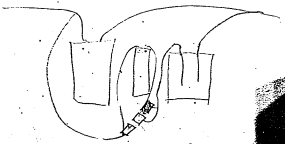
6

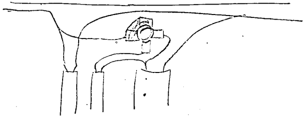


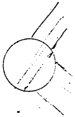
56
6
3
16
81

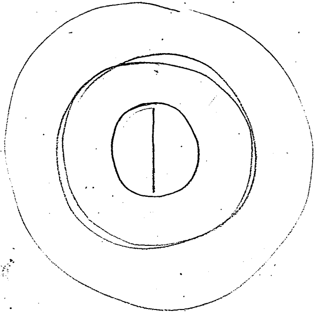
28
3
84

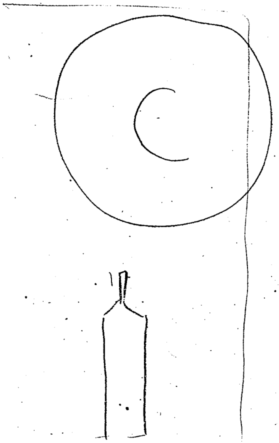


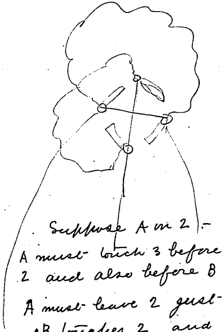




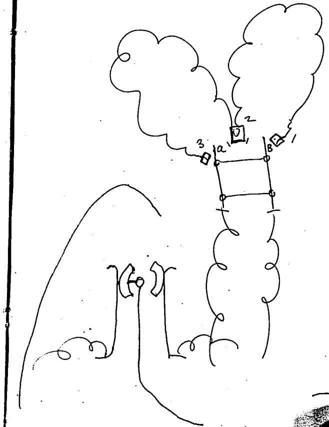


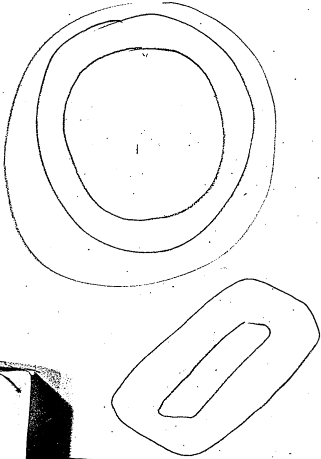


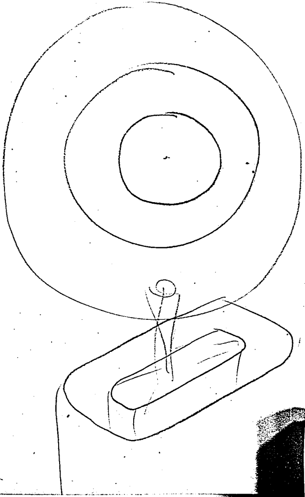


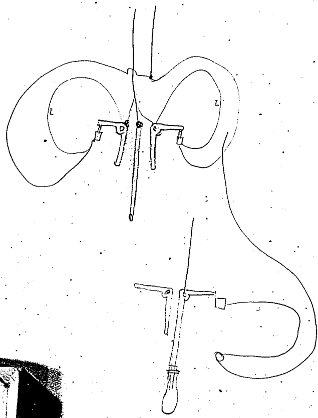


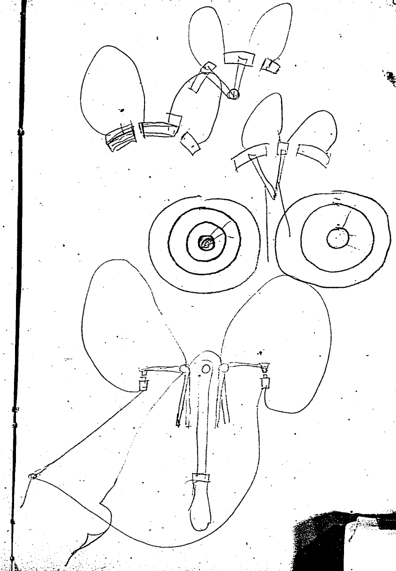
Suppose A on 2 ;- B on 1
A must touch 3 before leaving
2 and also before B leaves 1
A must leave 2 just before
B touches 2 and B must
touch 1 and 2 at once.

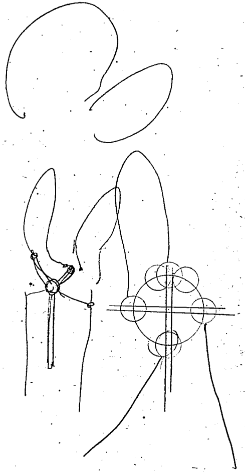


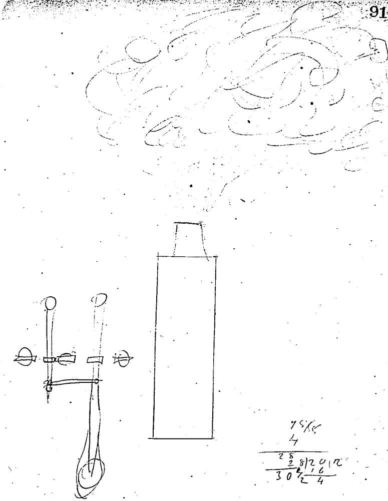





L
L







7 5/8
4
28
2 8|20(2
16
30 1/2
4

22 2 3/4
16
6

5 3/8

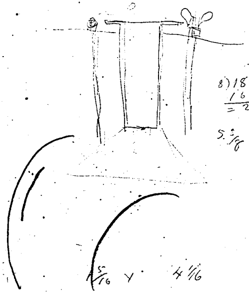
7
1 1/4
8 1/4

7/8 × 1 1/8

6, 1 8

7/8

13/16 4.5/8



8) 18 3/32 (2
16
= 2

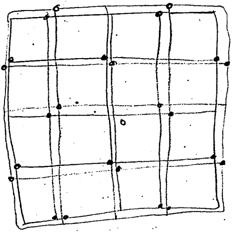
5.5/8

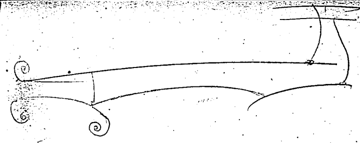
7

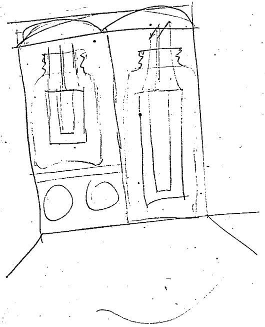
·8

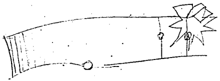
1 5/16 Y 4 1/16

2 5/16 Y 7 3/16 = 11.1/4.









.15
15
60
12
10 ~~9~~8/16) 1.80 (22 4/8 1/2
16
20
16

15
3
45

376
3 1/26

500 x

35
3
105
50
5.250

.400

.035
150
1750
35
.5250

.04

.04
150
600

1

10 11/16

10 1/2
10 7/8

10 11/16

1,070
600
50) 470 (9
[redacted]
450
= 20

10 11/16

.880

10.070

5.250

10.700
5 250
50) 5.450 (10
50
450
450

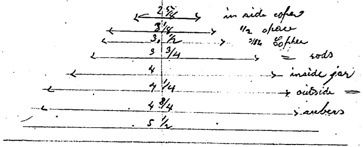
0'
650

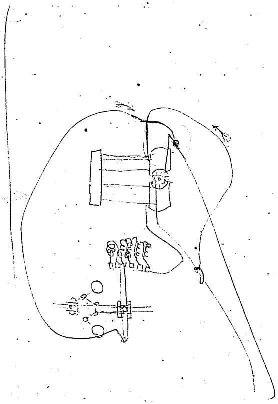
109
50
5450

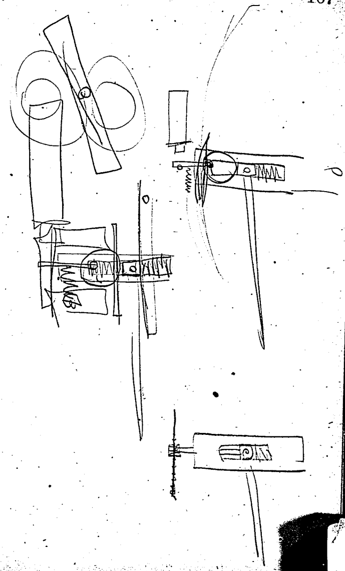
10.7.00
5250
50) 5450 (109
50
450
450

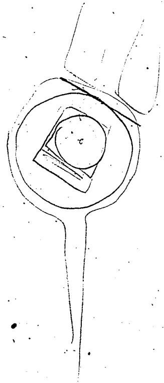
.0253
150
12650
0253
.037.950

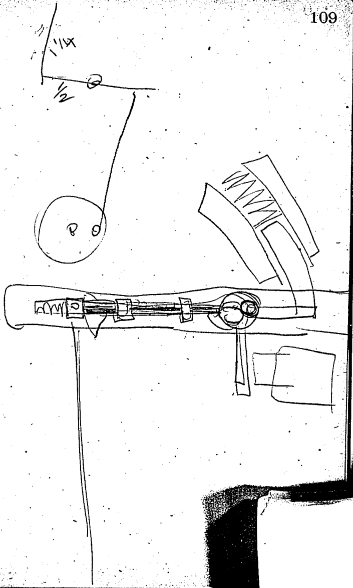
37

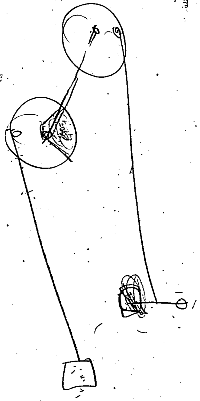

2 5/8
in side copper
3 1/8
1/2 space
3 1/2
3/16 Copper
3 3/4
= rods
4
inside jar
4 1/4
outside =
4 3/4
rubbers
5 1/2

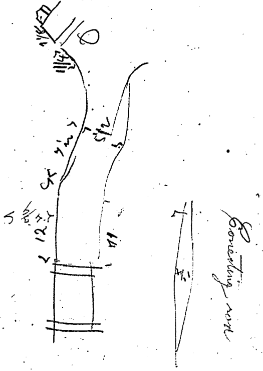







1 1/4
1/2

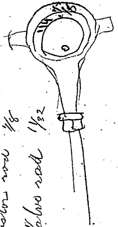



1/8
1 1/4
5 1/2
1/4

Connecting rod

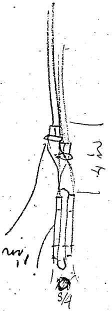
13 3/8
7/8

Spring 1/4 square steel
1/2 in spiral

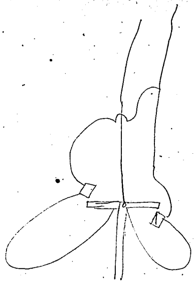


Piston rod 7/8
Valve rod 11/32

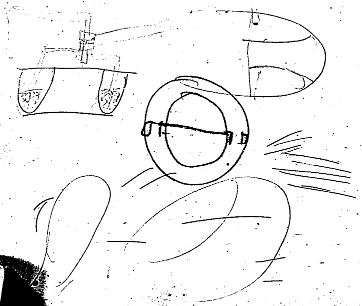
4 1/4



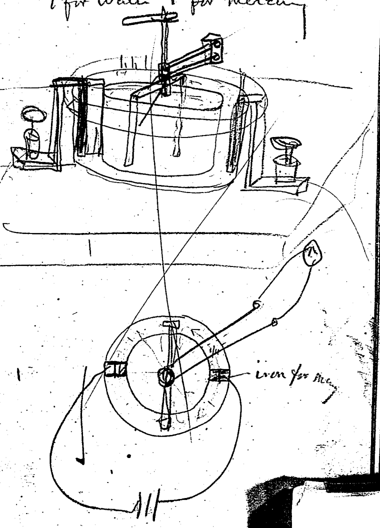
Face of fly wheel 6 in

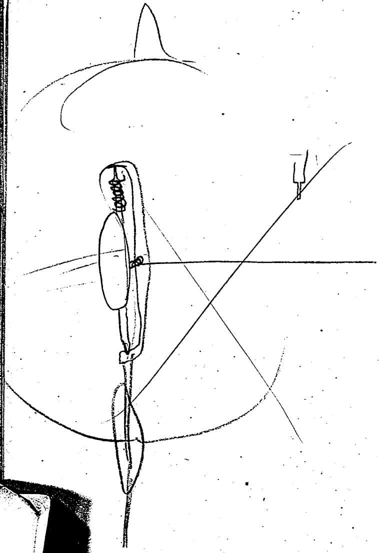


diameter
5 or 6 inches —
2 inches high.



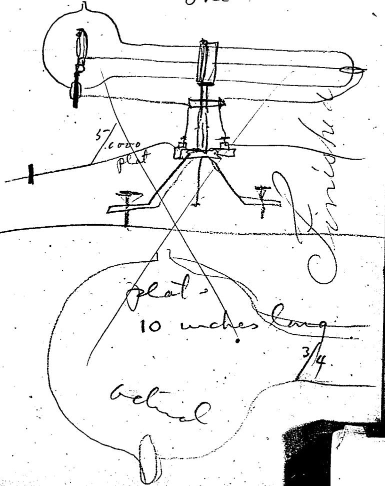
Current Regulator 2
1 for Water 1 for mercury


iron for mer

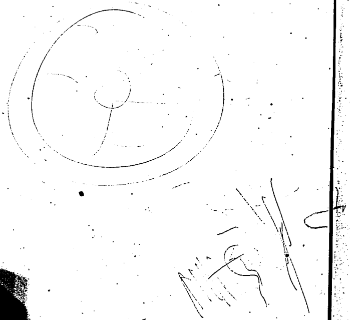


Thermo Galvanometer

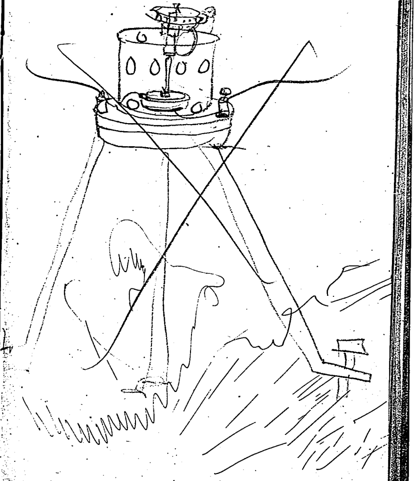
one —


5/.0000
plat
plat -
10 inches long
3/4
behind

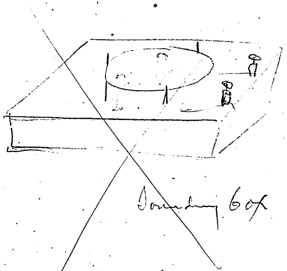
Finished



Odometer -

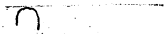


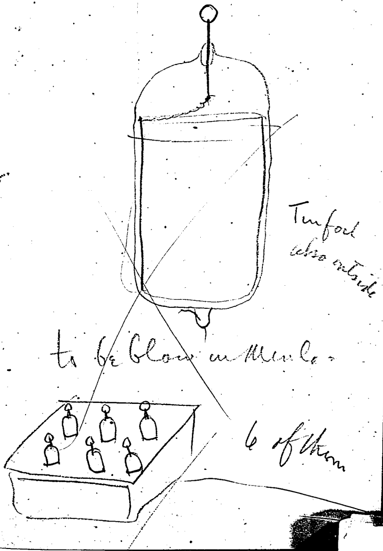
Made this



~~Sounding box~~

pillar one in high

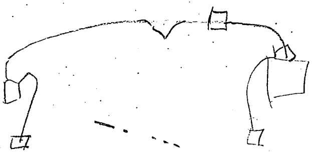


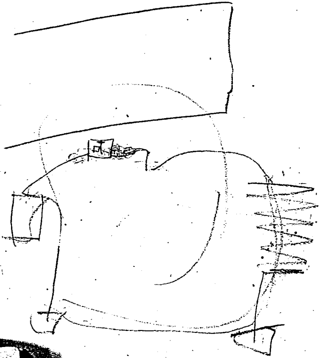


Tinfoil also outside

to be blown in Menlo

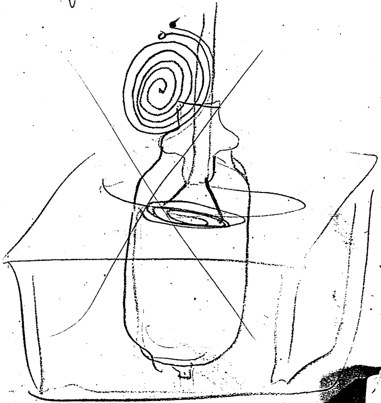
6 of them





Condenser -

3 or 4 feet of tin foil & Mica

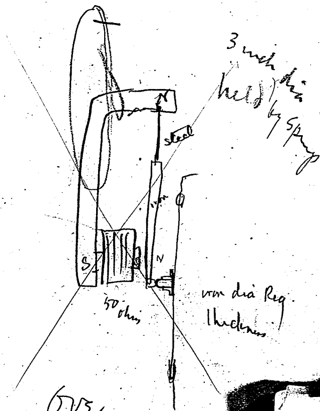


12)56(4
60
4.8

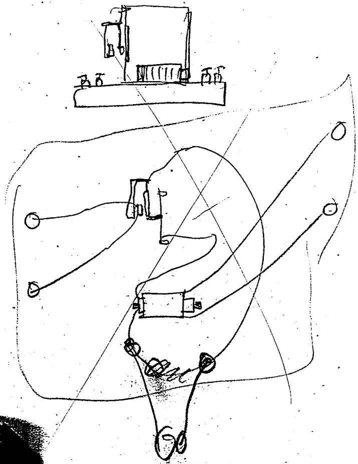
Treasurer

Relay

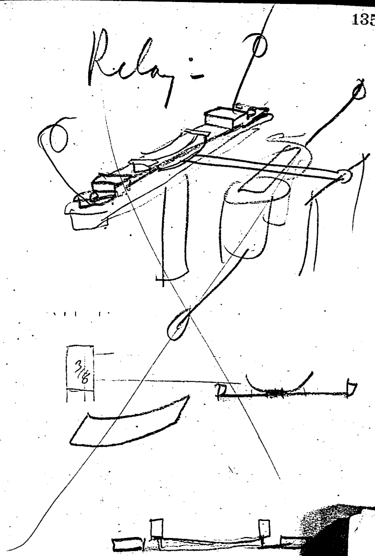
Telephone Repeater

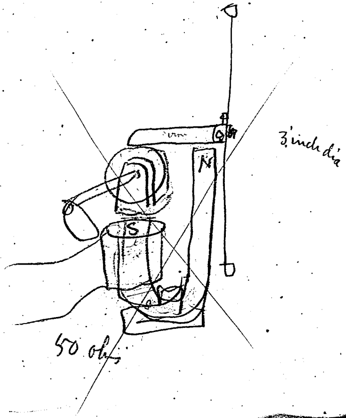

3 inch dia
held by Spring
N
steel
iron
S
N
50 ohms
iron dia Reg thickness

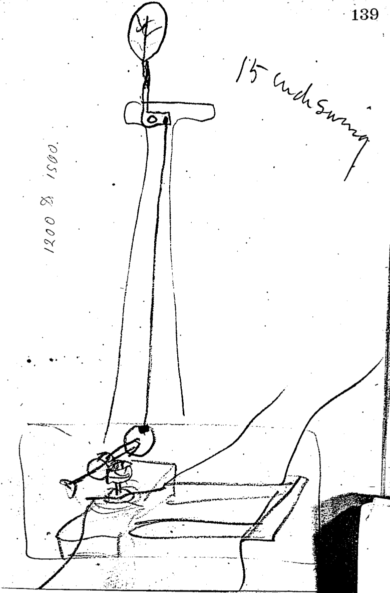
Over



Relay –




N
S
3 inch dia
50 ohms



15 inch swing

1200 & 1500

Dam 3.2 x 5,8 Groote flu

Grote 15, 56 lang

flues 15 x | flues 1.5, 2 5/8

3

54
3
162

52
5
260

52
3
156

208
73
624
1456
12)15184(1,265 4/12
12
31
24
78
72
64
60
4

162
73
486
1124
12)11726(9
108
92

156
73
468
1092
12)11378(948
108
357
48
98
96
2

6:3 7/8
12
72

17

12
3
36

52
4
208
72
416
1456
12)14976(1248
12
29
24
57
48
96
96

24
3
72

1248

5

12
4

12
5
60

12'.00(3.5
9
64) 300

600
10
6000

50) 6000
120

19.1.4

5T

No 19. R 5,8599

16
2
32

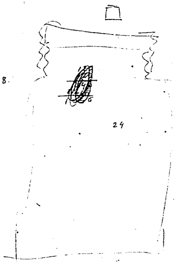
8

32
60
) 1920
12
3840
1920
23040

24
60
12) 1440 (120
12
24
24

12
5
90

12) 1920 (168
12
82
72
100
96
4



24

.42
5
220

1000
220
5) 780 (156
15
28
25
30

170, 6

8 in ~~[illegible]~~ 32
63
96
192
12)2016(168.
12
81
72
96
96

13
5
65

32
65
160
192
12)2080(173 10 in
12
88
84
46
36
10

one ohms resistance 8 in square 13 in long

4 ohms resistance 15 in square 30 inch long

16.

32
4
128
260
7680
256
12)33280(2,773 4 in
24
92
84
88
84
40
36
4

4,

13
4
52
5
260

24
5
120

15 60

120
60
12)7200(600
72

173 10
4
692

30
5
150

150
60
12)9000(741 8
84
50
48
200 6
12
682
741 2
682
= 59

65
60
12)3900(325 30
36
30
24
60
60

52
4
208
52
416
1456
12)14946(1248
12
29
24
57
48
96
96

15

54
4
216
32
432
1512
12)15552(1296
12
35
24
115
108
72
72

24
3
72

2

19941
12
39882
19941
2)239292(
119

624
65
120
144
1560

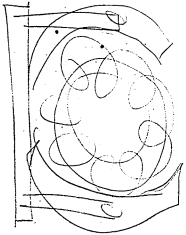
15055 0
12
30110
15050
180600
192
12)2080(173
12
88
84
40
36
4

6

1·14·54
12 18
23008
1·1454
137548

12
6.3 3/8
72

54 x 24



208
35
1040
1456
12)15600(1,300
12
36
36

14. 1.5050
12
30100
15050
2)180600(
9.0300

15. 1.9941
12
39582
19941
2)239292
21,9646

16. 2.4466
12
48932
24466
2)293592(
146796

95
5
475

1000
475
1525(

95
5
478)1000(2 5
950

1,14 5

12
2 2 9
1 1 4 5 7.
13.7 4 4 8

4

6½

3½ –

1¾ –

1 3

1000
475
5)525(505
1
25

3¼

1½

025
5
9.0

505
5
2525

505
5
2525

35 32

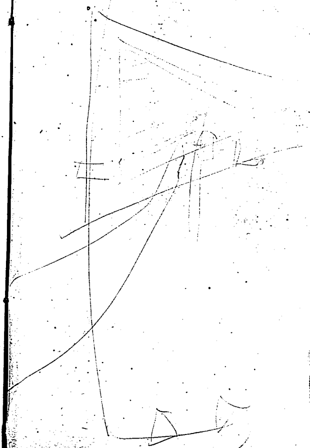
9

12)1111.0(9.25
108
31
24
70
60
10

92

7
84

1 ½ 2 ¾

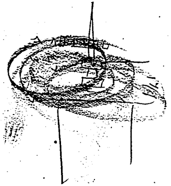


112
20
2280
50
114,05.0

12
3
36
4
40

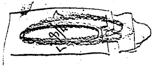
50) 2280 (4.4
200
280
250
30
20

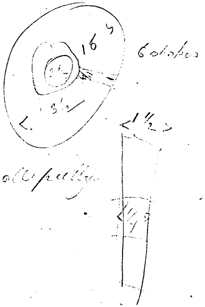
0



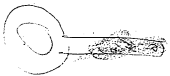
Walnut wood corn

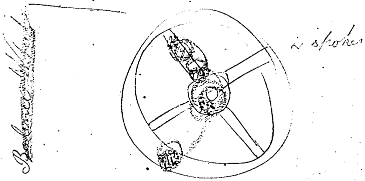
Corn



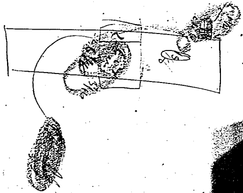

16
6 spokes
3½
<1½>
<1¼>

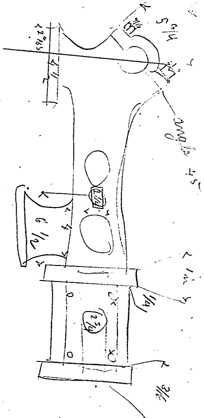
Small pulley





Balance wheel

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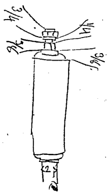
1/4
angle
45
6 1/2
1 1/2
1/4
2 3/4
3/16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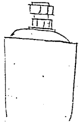

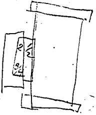

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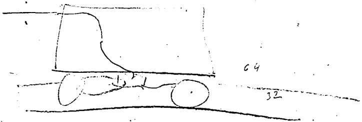
1 6
2 1 1 2
3 5 2
5 6 3 2



16
12
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2
56

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8)352(44
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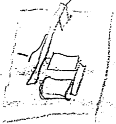

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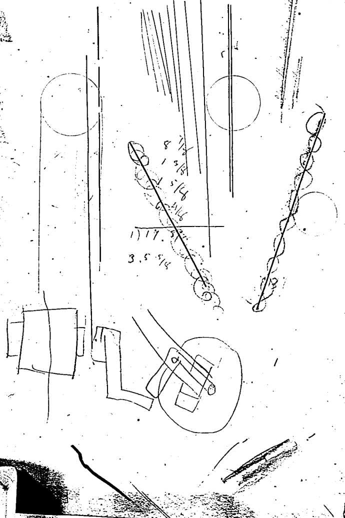
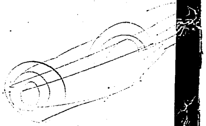
30
52
50
2

Sam E. ~~Mother~~ ~~Mother~~ Sister } one
½ Roods Uncle


8 1/8
1 3/8
2 5/8
6 1/8
1) 17. 5
3.5 5/8
3

Top	Botom
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3	4
5	6